

REMARKS

Reconsideration of the allowability of the present application in view of the above claim amendments and the following remarks is requested respectfully.

Discussion of the Amendments

Claims 1 and 3 have been amended to recite the step of contacting marine oil which comprises crude oil or foundation oil with silica. Support for this is found in the application at, for example, page 9, lines 11 and 12, and page 12, line 31, of the application and in Claim 72 as filed originally.

Claim 31 was amended to define the invention as one of marine oil which has been refined by applicant's process. Support for this amendment is found in the application at page 13, lines 8 to 16.

Claim 23 was amended to correct a typographical error.

Claim 72 was amended to more particularly define the claimed process as one in which foundation oil is used.

Claims 75 to 83 have been added. Support for claims 75 and 76 is found, for example, on page 7, lines 15 to 26 and page 10, lines 17 to 25. Support for Claims 77 and 78 is found, for example on page 13, lines 15 to 21 and page 9, lines 22 to 27. Support for Claim 79 is found, for example, on page 13, lines 15 to 19 and on page 14 lines 6 to 10. Support for Claim 80 is found, for example, on page 10, lines 11 to 13. Support for new claim 81 is found, for example, on page 11, lines 9 to 14. Support for new claims 82 and 83 is found, for example on page 12, lines 3 to 13.

Claims 14 and 17 have been cancelled.

Discussion of the Claims

Claims 14, 17, 24 to 30, 32 to 60, 62 to 71, 73, and 74 have been cancelled. Claims 1, 3, 23, 31, and 72 have been amended. Claims 75 to 83 have been added. The claims presently pending are Claims 1 to 13, 15, 16, 18 to 23, 31, 61, 72, and 75 to 83.

Discussion of the Examiner's Rejections Under Section 102(e)

Claim 31, directed to a refined marine oil prepared by the process of Claim 1, and Claim 61, directed to a process for using such an oil, were rejected under 35 USC 102(e) as anticipated by WO 96/28150 to Eriksen.

The Examiner asserts that Eriksen discloses a refined seal oil. Eriksen, however, does not disclose the level of purity achieved by the refined seal oil. In the absence of any teachings regarding oil processing or purity, it appears that the cited art does not consider the degree of purity of oil to be an important feature.

By contrast, the refined oil of the present invention is of a quality and purity not before known in the prior art. The data in Tables 1, 2, 4, and 5 of the application show that trace metals, pesticides, PCBs and phosphorus were essentially completely removed from oil prepared with the claimed process. The presence of iron, in particular, is deemed undesirable as it presents a source of ongoing oxidation in the oil. The level of trace metals in oil produced with the invention is almost below detection limits.

Given the above, applicant's refined marine oil is clearly different from that disclosed in the art. As such, Eriksen does not anticipate applicant's claims.

The Examiner's rejection is traversed respectfully.

Rejection Under 35 USC 102(b) Based on US Patent 5,336,794 to Pryor et al.

The Examiner rejected Claims 1 to 4, 6, 7, 10, 12, 13, 15, 16, 18 to 20, 31 and 72 as being anticipated by US Patent 5,336,794 to Pryor et al.

The Examiner's rejection is traversed respectfully.

In the first instance, applicant notes that Claim 31 is directed to a marine oil. Nowhere in Pryor et al. is there any disclosure of a marine oil. Further the Examiner has not even asserted that Pryor et al. makes such a disclosure. As such, the Examiner's rejection of Claim 31 is deficient on its face.

The remaining claims, which define a process for refining marine oil, are also patentable over Pryor et al. For a reference to anticipate a claim, it must disclose each limitation of the claim. Each of these claims recite the step of contacting marine oil with silica. Nowhere in Pryor et al. is there any disclosure of this step or of any step which involves marine oil. The Examiner appears to argue that Pryor et al. inherently discloses the use of marine oil since it discloses generally that the oils which may be refined by the processes therein include animal oils. However, "marine" is a limitation on the claim and this is not disclosed anywhere in Pryor et al. In fact, not only does Pryor et al. fail to disclose a process which involves the marine oil but it fails also to disclose specifically any process using animal oil.

Given the above, the Examiner's rejection of the above claims as being anticipated by Pryor et al. should be traversed.

Discussion of the Examiner's Rejection Under Section 103

Claims 1 to 13, 15, 16, and 18 to 23 were rejected as being unpatentable over US Patent No. to 5,336,794 to Pryor et al. in view of US Patent No. 5,069,829 or US Patent 5,264,597, both to van Dalen et al., and US Patent

5,855,944 to Koschinski et al. Of the above documents, only Koschinski et al. relates to a process involving marine oil. Pryor et al. and the van Dalen et al. patents do not contain any disclosure respecting marine oil and the only specifically disclosed processes therein involve vegetable oil.

The Examiner's rejection is traversed respectfully.

To establish a *prima facie* case of obviousness, the Examiner must show that that one skilled in the art would have been motivated to combine the teachings of the cited documents to arrive at applicant's invention. Applicant submits respectfully that one skilled in the art would not have been motivated to combine the teachings of Pryor et al. and the Van Dalen et al. references, which do not teach any method for refining marine oil, with that of Koschinski et al., which relates to treating fully or partially refined marine oil.

Marine oils are typically more contaminated than vegetable oils. Contaminants are introduced into the marine oil in the course of rendering the mammal, the whole fish, or the offal from fish filleting. Oil-soluble contaminants from gut contents and in some cases also compounds from the fish skin enter the oil in addition to proteinaceous and mucilagenous material. This is a particular concern if the oil is to be deodorized, because of the elevated temperatures used in the deodorization process and the very strong fishy odor and taste of undeodorized marine oils.

Vegetable oils do not have similar issues because phosphatides (2-4%) and free fatty acids (< 0.5%) are the primary contaminants. Alkali refining with NaOH solution, or at least very thorough acid treatment with phosphoric acid or citric acid are often used along with adsorbent treatments. Typically, edible vegetable oil manufacturers use both phosphoric acid treatment and alkali refining with vegetable oils to ensure that an odor-and taste-free oil of good flavor stability is produced.

Given the above, it is quite clear that, due to the differing impurities in vegetable oil as compared to marine oil, refining steps used for refining vegetable oil can not be assumed to be appropriate for use in marine oil and vice versa. As such, one skilled in the art would not therefore have been motivated to combine the teachings of Pryor et al. and the van Dalen et al. references, which relate primarily to vegetable oils and contain no disclosure respecting marine oils, with the teachings of Koschinski et al., which relates to marine oil, to arrive at applicant's invention.

There is an additional reason as to why Claims 2 and 3 are patentable over the cited art. In order to establish a *prima facie* case of obviousness, the Examiner must show that one skilled in the art would have had a reasonable expectation of success that the invention would work for its intended purposes. Prior to applicant's invention, however, one skilled in the art would not have expected that marine oil may be refined without the use of an alkali treatment step. In fact, prior art refining processes for marine oil invariably required alkali treatment (see page 6, lines 1 to 3, of the application). Both Claims 2 and 3 exclude such treatment (we note that the starting product of Claim 3 has not been previously alkali treated as "foundation oil" has been specifically defined in the application as excluding such treatment - see page 13, line 11, of the application).

While the Examiner cites the van Dalen et al. patents for disclosing that the alkali treatment step may be forgone, it should be noted that these patents do not discuss the refining of marine oil and, in fact, relate primarily to vegetable oil which, as discussed above, differs extensively from marine oil. It can not be assumed, therefore, that a refining process which forgoes alkali treatment would be successful in refining marine oil simply because it has been successful in refining vegetable oil.

Moreover, the Van Dalen et al. patents teach that alkali refining may be avoided only when using a physical refining process that involves acid refining.

This is shown by the paragraph preceding the paragraph containing the excerpt quoted by the Examiner. For example, col. 1, lines 44 to 49 describing that "...oil is treated with a concentrated acid, such as in particular citric acid...". In Example 1, Van Dalen et al. also uses citric acid. Furthermore, the focus of Van Dalen et al. appears to be on the type of silica compound used in refining oil. Aside from the particular silica employed, there does not appear to be any teaching beyond alkali refining and acid refining process steps known in the art. Therefore, Van Dalen et al. does not provide any motivation for a skilled person to omit the alkali refining step from marine oil refining or any expectation of success from omitting the step.

Given the above, the Examiner's rejection of the claims under Section 103 are traversed respectfully.

Discussion of the Examiner's Section 112, Second Paragraph, Rejections

The Examiner rejected Claims 14, 17, and 31 under Section 112, second paragraph. Claims 14 and 17 have been cancelled without prejudice. Claim 31 has been amended to replace the phrase which created the ambiguity which the Examiner objected to.

Discussion of the Examiner's Objection to the Description

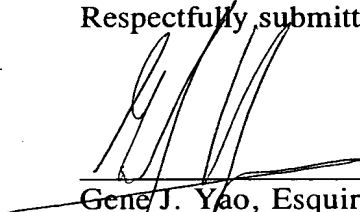
The Examiner objected to the descriptive portion of the application because it included trademark terms which were not identified by their generic terms. Applicant is presently consulting with the inventors respecting these and will amend the descriptive portion in due course.

Conclusion

In view of the above amendment and remarks, an early and favorable Action is requested respectfully. Applicants note that the Examiner had not set a shortened statutory period for responding to the present Action. Accordingly, no extension fee is required.

The commissioner is hereby authorized to charge any fees associated with this communication to Deposit Account No. 19-5425. A duplicate of this letter is attached.

Respectfully submitted,



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